

Exit Questionnaire Summary 2000-2004

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This report summarizes the findings of the completed Exit Questionnaires from the time period 2000-2004. Approximately 800 questionnaires were collected and summarized. Interviews were composed of 2 pages of questions followed by a page requesting demographic data. All employees, regardless of position, (i.e. students, postdoctoral fellows, permanent employees etc.) received the same form.

The initial goal of this study was to determine whether there were statistical differences by gender and ethnicity in how departing employees viewed their time at LBNL. However, many of the important findings are in fact significantly broader in scope.

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LBNL report card

1 satisfactory

2 somewhat satisfactory

3 somewhat unsatisfactory

4 unsatisfactory

Mean	Standard Deviation	Survey Item
1.15	0.46	Relationships with peer and co-workers
1.21	0.50	Reasonable accommodation to individual physical limitations
1.25	0.63	Equal opportunity regardless of race/ethnicity
1.27	0.56	Division commitment to Environment, Health, and Safety
1.28	0.52	Quality of employee publications
1.28	0.64	Equal opportunity regardless of gender
1.29	0.56	Training in Environmental Health and Safety
1.29	0.70	Personal relationship with supervisor
1.36	0.58	Employee services
1.38	0.64	Physical conditions of my position
1.40	0.69	Sense that my job was connected to the work of others
1.40	0.81	Quality and style of supervision
1.41	0.71	Challenge of work assignments
1.43	0.74	On-the-job training
1.44	0.72	Employee benefits
1.45	0.83	Clarity and/or direction from supervisor
1.46	0.84	Respect for the type of work I do
1.52	0.87	Recognition for my individual achievements
1.54	0.81	Process by which I was informed of activities and changes within the Division and throughout the Laboratory
1.54	0.84	Formal job training
1.55	0.87	Computer training
1.62	0.87	Process by which I was informed of activities and changes within my department
1.66	0.92	Interaction with Division and/or laboratory bureaucracy
1.66	0.93	Process by which my salary was established in relation to the salaries of others at LBNL in comparable positions
1.80	0.98	Salary
1.87	1.06	Process by which my salary was established in relation to the salaries of others outside of LBNL in comparable positions
1.95	1.11	Opportunities for advancement
1.97	1.10	Advancement possibilities

Key Summary Points

The majority of items are rated satisfactory or unsatisfactory

Most highly rated: Relationships with peer and co-workers

Lowest rated: Advancement possibilities

Salary

Interaction with the Division and/or Laboratory Bureaucracy

Overall, Exit Survey responses indicate general satisfaction in exiting employees' experience at LBNL. The overall mean across all quantifiable survey items on a 1-4 scale (1 = satisfactory) is 1.43.

However, as responses become less positive, the standard deviation increases. This reflects the bi-modal distribution of responses, such that while the majority considers their experience at LBNL to be satisfactory, a significant minority considers their experience unsatisfactory.

Statistically Significant Findings:

- Staff members are significantly less satisfied with their experience at LBNL than students/postdoctoral fellows, across several measures. As such, all analyses separate student/postdoctoral fellows from staff.
- Non-minorities are significantly less satisfied with the recognition they receive for their achievements and the supervision they receive.
- Women are significantly less satisfied than men across several dimensions of their experience at LBNL

Women indicate an exit from LBNL as a resignation at a far higher rate than men do. Nearly half of the women respondents indicate they resigned, compared to only 29% of the men. While problems with this survey item are noted in Appendix A, the preponderance of women's indication of resignation points to a potential gender bias at LBNL that ushers women's resignation from the Lab.

Although mean survey responses are generally positive, those individuals who chose to include written comments on their surveys often expressed considerably less favorable evaluations of their experience. These comments are not included in this report, however these data are available upon request.

Results: Statistically Significant Differences Between Groups

Students/ Postdoctoral Fellows and Staff

Staff is significantly less satisfied than students & postdoctoral fellows with:

- Quality and style of supervision
- Recognition for my individual achievements.
- Respect for the type of work I do
- Advancement possibilities
- Challenge of work assignments
- Training (with the exception of EH&S training)
- Equal opportunities regardless of gender and race/ethnicity
- Interaction with Division and/or Laboratory bureaucracy
- Communication within their department and throughout the laboratory
- How salaries are established in relationship to others at LBNL and comparable positions outside of LBNL

Relative to students and postdoctoral fellows, the staff expresses less satisfaction with issues that have direct impact on their daily work environment, and with job training and career development.

Staff members also express less satisfaction with the Laboratory bureaucracy, as indicated by significantly lower ratings relative to students on their interactions with the bureaucracy and the communication in their department and across the Laboratory.

Less staff satisfaction with how salaries are established may also be associated with their lower satisfaction in terms of recognition for performance and possibilities for advancement.

Students/Postdocs are less satisfied with:

- Benefits and employee services

Because students and postdoctoral research fellows are not afforded the same employment benefits as staff members are, it is not surprising that they express greater dissatisfaction on this measure. However, students and postdocs also express greater dissatisfaction with Employee Services (employee buying service, medical services, shuttle bus service, etc.). While some of these services are equally accessible by students/postdocs and staff, others may not be made available to them (e.g., parking, full medical benefits).

Due to the transient nature of student and postdoc positions, they may be less likely to have strong feelings about these issues that may be more relevant to staff members. Moreover, as a transient population, students and postdocs may be “satisfied” with conditions they would consider unsatisfactory if they were longer-term employees. Nonetheless, the differences between student/postdoc and staff responses suggest that employees who may be more invested in the Lab as staff members are less satisfied with what employment at the Lab has to offer them in terms of work conditions and career development.

Staff and students express significantly different concerns across one-third of the survey measures. Thus, staff and students will be divided in the following sections into two different samples, and analyses performed separately for students/postdocs and staff.

In the following two sections, the survey responses are analyzed for statistically significant differences by race and by gender. Each of the next two sections will comprise of three summaries: 1) statistically significant differences in survey responses by race and gender among the entire sample of respondents, 2) statistically significant differences by race and gender among staff, and 3) statistically significant differences by race and gender among students.

Race/ Ethnicity

Across the entire pooled sample, non-minorities express less satisfaction with:

- Recognition for my individual achievements
- Quality and style of supervision

There were no statistically significant differences between minorities and non-minorities among student survey responses. Thus, these items represent statistically significant differences between minority and non-minority satisfaction with their work conditions among staff.

The results indicate that Whites (not of Hispanic origin) are less satisfied than minority staff in the recognition they receive for achievements and in the quality and style of supervision they receive.

This finding of non-minority dissatisfaction is consistent with the race/ethnic distribution of EEO cases filed across the Lab. While minorities as a whole file the greater proportion of cases, Caucasians comprise of the largest single group filing EEO cases, although Caucasians also comprise of the majority of the Lab population.

Gender

The gender distribution was similar for students & postdoctoral fellows and staff.

Overall, across the entire sample, females indicated greater dissatisfaction than males with:

- Relationships with peers and coworkers
- Personal relationship with supervisor
- Quality and style of supervision
- Clarity and/or direction from supervisor
- Challenge of work assignments
- Salary
- Equal employment opportunity regardless of gender
- Process by which I was informed of activities and changes within my department

Female staff members expressed greater dissatisfaction than male staff with:

- Relationships with peers and coworkers
- Challenge of work assignments
- Salary
- Equal opportunity regardless of gender

Among staff, women express greater dissatisfaction with the conditions of their work. Consistent with a study conducted by the Government Accountability Office, which found that women at LBNL are paid significantly less than men, women in the Exit Survey are less satisfied with their salary. Women are also less satisfied with equal opportunity with regard to gender, which is consistent with the fact that women file a greater proportion of EEO cases at the Lab. Both of these items implicate gendered dissatisfaction with Lab policies.

Women are also less satisfied than men in their daily work experience, as evidenced by significantly lower ratings of their relationships with peers and coworkers and the challenge of their work assignments. These two items implicate a gendered dissatisfaction with workplace climate or culture.

Female students are less satisfied than male students with:

- Personal relationship with supervisor
- Quality and style of supervision
- Clarity and/or direction from supervisor

Among students, statistically significant gender differences arise in students' relationships with their supervisor. Female students express significantly less satisfaction relative to male students across every measure of supervision. Consistent with the research literature on gender biases in science and engineering fields in college, this finding suggests a potential gender bias in interactions with supervisors (Sax, 1994).

Appendix A: Observations and Recommendations

In addition to analyzing statistically significant differences between groups at LBNL, close examination of the data lead to some other notable observations.

Reasons for Leaving:

The first item on the Exit Questionnaire asks respondents to identify their reason for leaving among the choices listed in the first column in Table 1. Possibly due to the placement of this item on the questionnaire, approximately 10% of the respondents neglected to answer this question. Additionally, many people do not accurately assess why they are leaving.

For example, one may indicate a “resignation” but in a later survey item, indicate they are “leaving for postdoctoral position”, in which case this respondent was a student or postdoctoral research fellow, whose employment at LBNL is by definition, a temporary appointment, and in which case, the more accurate reason for leaving would be “end of appointment”. Hence, there is substantial ambiguity as to what constitutes a “resignation” and what constitutes an “end of appointment”. This particular item is perhaps the most unreliable in the Questionnaire. In order to clarify respondents’ reasons for leaving, we recommend that future questionnaires include check boxes for respondents to clearly identify whether they are students, postdoctoral fellows, and regular employees.

Nonetheless, in Table 1, we find that nearly half (46%) of the women identify their exits as “resignations”, compared with only 29% of the men. The majority of men’s exits are identified as “end of appointment”. The majority of the men (nearly half) identify their exits as “end of appointment”, while only 39% of the women do. While misrepresentation of exit type is likely, as described above, there is no reason to believe that women are more likely to mistake their end of appointment with a resignation. Thus, we find the preponderance of women identifying their exits from the Lab as “resignations” to be worthy of attention and further examination.

Table 1. Reasons for Leaving:

Reason	Gender		% of Total
	Male	Female	
Resignation	29.41	45.50	34.65
Retirement	11.98	9.46	11.16
Disability Retirement	0.65	0.00	0.44
Reduction in Force	6.54	3.60	5.58
End of Appointment	49.24	38.74	45.81
Other Involuntary Exit	2.18	2.70	2.35
Totals	459 (67.40%)	222 (32.60%)	681 (100%)

Tests of statistical significance for differences in responses between employees who indicated they resigned and all others suggest that those who resigned are significantly less satisfied with their experience at the Lab across several measures. People who resigned express greater

dissatisfaction with each of the questionnaire items under “work conditions” through “Salary”. Resigned employees are significantly less satisfied with all items under “Communications within the Laboratory”, with the exception of “Quality of employee publications”, and resigned employees are less satisfied with on-the-job training, computer training, and opportunities for advancement. Clearly, those who resign from the Lab are less satisfied with their experience than others, and it would behoove the Lab to more closely examine the particulars of the dissatisfaction in order to more effectively retain employees.

As an Exit Questionnaire, this survey is presumably intended to examine reasons for employee exits from the Lab. Yet, there is no single item on the survey instrument that simply asks for specific reasons as to why the employee has left. The current survey item that asks for the identification of a “Reason for Leaving” is rather an identification of the type of exit. We recommend the addition of a survey item that asks for a specific reason for leaving the Lab in future questionnaires. For example, if the type of exit is a resignation, a follow-up might read:

Please indicate the reason(s) listed below that most closely describe your reason for leaving LBNL:

1. Salary
2. Physical conditions of my workplace
3. The working environment/ climate issues
4. Work/Life or Work/Family issues
5. Career advancement
6. Other, please explain _____

Additionally, this item could have an open-ended fill-in response option.

Supervision:

Close review of survey results suggested that the extent to which respondents were satisfied with their relationship with their supervisor was closely associated with their satisfaction with their experience at the Lab overall. A statistical analysis of this hypothesis indicates a high correlation between supervision¹ and satisfaction with work conditions², which was in turn, highly correlated with satisfaction with job training³ and perceived advancement opportunities⁴. Performance evaluations and access to job training opportunities are somewhat dependent on supervisors. Thus, one’s satisfaction with the supervision they receive may have significant implications for retention.

¹ In this post-hoc analysis, supervision is measured as an aggregate of the following survey items: “Personal relationship with supervisor”, “Quality and style of supervision”, and “Clarity and/or direction from supervisor”.

² This is an aggregate measure of “Sense that my job was connected to the work of others”, “Recognition for my individual achievements”, “Respect for the type of work I do”, and “Challenge of work assignments”.

³ Aggregate measure of: “On-the-job training”, “Formal job training”, and “Computer training”.

⁴ Aggregate measure of: “Advancement possibilities” and “Opportunities for advancement”.

In addition, we believe a broader Lab-wide Climate Survey will be a useful tool in further identifying problematic issues at the Lab. While the Exit Survey is informative in identifying employee sentiments at the end of their relationship with the Lab, a Climate Survey would be a more pro-active gauge of current employee satisfaction. The Climate Survey would enable a comparison between employees who leave and those who stay, in order to identify determinants of retention and patterns associated with exits, whether voluntary or otherwise. Such efforts would point to solutions to help the Lawrence Berkeley National Laboratory to achieve the status as the best place to do science that it strives for.

Appendix B: Method

This report summarizes the findings of the completed Exit Questionnaires from the time period 2000-2004. Interviews consisted of 2 pages of questions followed by one page requesting demographic data.

All employees received the same form upon termination of their employment at LBNL, regardless of their employment status (i.e. students, postdoctoral fellows, permanent employees etc).

Although the Exit Questionnaire has been in use since 1997, prior to 2000, so few questionnaires were returned that the decision was made to begin analyses in 2000. Table 2 contains the response rates for surveys returned relative to total terminations from the Lab in each fiscal year included in our analyses. As indicated in Table 2, in fiscal year 2001, more concerted efforts were made to encourage employees to return the Exit Questionnaires, resulting in a gradual increase in the response rate over time.

Table 2. Survey Response Rate by Fiscal Year

Fiscal Year	Total Exits	Surveys Returned	Response Rate %
2000	924	31	3.3
2001	857	112	13.1
2002	795	175	22.0
2003	742	219	29.5
2004	746	261	35.0
Total	4064	798	19.6

Responses to the survey items are scored on a Likert scale ranging from 1 to 5, with the following classifications:

- 1 satisfactory
- 2 somewhat satisfactory
- 3 no opinion
- 4 somewhat unsatisfactory
- 5 unsatisfactory

Because the middle value (3) is an indication of no opinion rather than a part of a continuous scale measuring degrees of satisfaction, all survey responses were recoded in the analyses to exclude “no opinion” responses. The Likert scale was then recoded to produce a continuous measure of satisfaction, reflecting the following:

- 1 satisfactory
- 2 somewhat satisfactory
- 3 somewhat unsatisfactory
- 4 unsatisfactory

Comparisons between the original coding and recoding of survey responses indicated very few differences in results. However, we believe the recoding produces a more reliable measure.

Students/Postdocs:

Although the questionnaire does not ask for respondents to identify whether they are students, postdocs, or staff, we expected there to be significant differences between student/postdoc and staff experiences at the Lab. Thus, students and postdocs were analyzed separately from staff.

The identification of students and postdocs was made by respondents' indication as such in their job title. In the few cases in which student/postdoc status was not made explicit, a determination of student/postdoc status was made if the respondent identified himself or herself as "lab assistant" or something other than a postdoctoral fellow and they indicated their new employer was a university and they left LBNL within two years. This identification was made in less than 3% of the sample. We believe this to be a conservative way to classify students/postdocs, and any bias that might result from this coding scheme would likely lower the mean responses to items and reflect greater satisfaction, since as a whole, students and postdocs were more satisfied with their experience at the Lab relative to staff members.

Race/Ethnicity:

In examining survey responses by race/ethnicity, the sample was categorized by minority and non-minority status by grouping all those who identified as non-White into one category to compare with those who identified themselves as White (not of Hispanic origin). While this method clearly loses some information as to specific ethnic identities of the sample, the small numbers of respondents within each ethnic minority category rendered data analyses unreliable. Thus, analyses of differences across the Lab by race/ethnicity make the comparison between Caucasian and all ethnic/racial minorities.

Statistical Significance:

In the analyses in this report, tests of statistically significant differences between group mean responses to each of the survey items are performed (t-tests). A difference between groups is considered "statistically significant" there is less than a 5% probability that the difference between groups was due to chance, and that there actually is no "real" difference between groups. In other words, we can be 95% confident that the results show a real difference between group means. The mathematical equation for calculating the t-statistic is:

$$t = (Y_1 - Y_2) / (sd Y_1 - sd Y_2),$$

if Y_1 = mean of group 1, Y_2 = mean of group 2, sd = standard deviation.

Given $(n_1 + n_2 - 2) = 796$ degrees of freedom, the value of the t-statistic must be larger than 1.645 in the t-distribution (an approximation of the normal distribution, but adjusted for smaller samples) to be considered statistically significant to less than a 5% probability of random error.

The t-statistic compares the observed difference between groups to the normal distribution of variation from a mean. If the observed difference is greater than would be expected given normal, random variation about the mean, then the difference is considered statistically significant.

Appendix C: Data

This report summarizes the findings of the completed Exit Questionnaires from the time period 2000-2004. A total of 798 questionnaires were collected and analyzed.

Of the 798 respondents, 64% were male, 30% female (6% did not specify their gender).

The majority (60%) of respondents identify their ethnicity as White (not of Hispanic origin), followed by Asian (22%). Table 3 contains the distribution of responses by ethnicity.

Table 3. Frequency Distribution of Race/Ethnic Identification

Race/Ethnicity	Frequency	Percent
White (not of Hispanic origin)	475	60
African American	31	4
Asian	175	22
Native American/ Alaskan Native	3	<1
Hispanic	36	5
Other non-white	13	<2
Missing	65	8
Total	798	100

Approximately 58% of the sample was staff and 42% were students or postdoctoral fellows.

The majority of respondents are U.S. citizens (69%) and the majority of the non-citizen respondents are students or postdoctoral fellows (66%). Table 4 contains the frequency distribution of citizenship by student status.

Table 4. Frequency Distribution of Citizenship by Student Status

Citizenship	Status		Total
	Staff	Student/Postdoc	
U.S. Citizen	339 (81%)	178 (54%)	517 (69%)
Non-U.S. Citizen	79 (19%)	153 (46%)	232 (31%)
Total	418 (100%)	331 (100%)	749 (100%)

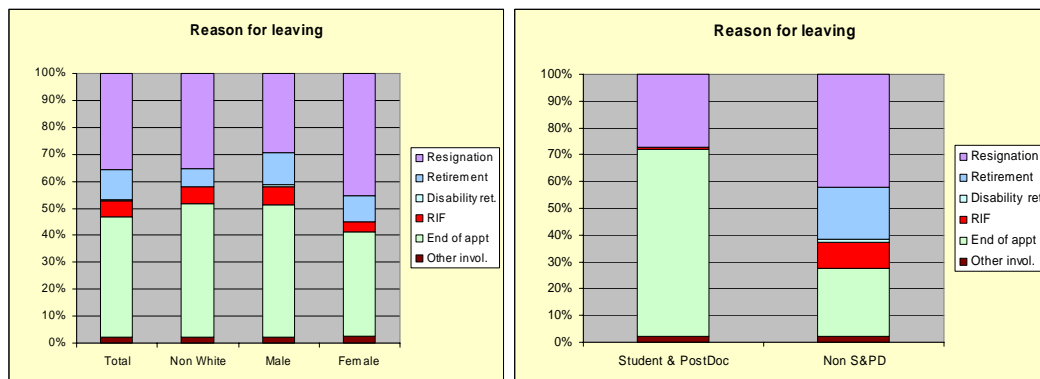
References

Sax, L.J. 1994. Predicting and major-field differences in mathematical self-concept during college. *Journal of Women and Minorities in Science and Engineering*, 1: 291-307.

Appendix D: Graphical Representation of the Data

Responses were examined for statistically significant differences between the total population and the total non-white population. Individual ethnic groups were not examined due to the small pool size for some ethnic groups. Responses were also examined for statistical differences between males and females. Responses from exiting employees who indicated they were students or postdoctoral fellows were also examined for statistical differences between students & postdoctoral employees and staff. The following graphs display mean responses to the Exit Questionnaire in the order in which they appear.

Reason for leaving



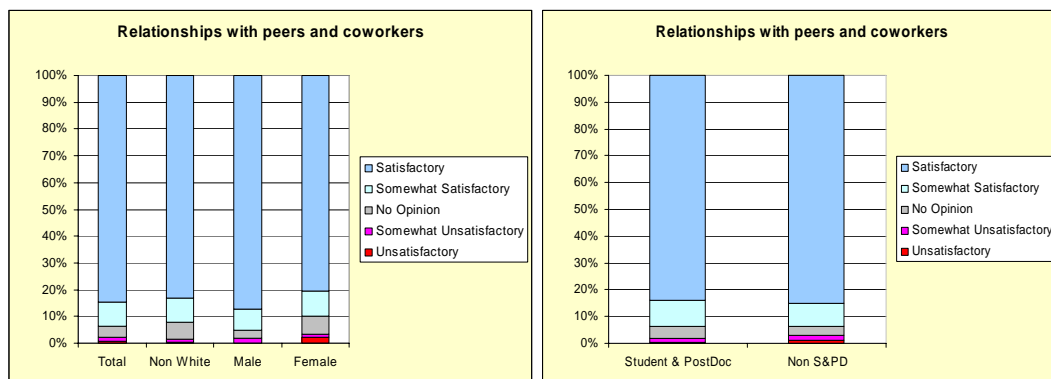
Comments:

46% of females indicate resignation for reason of departure compared to 29% of males. More males indicate end of appointment.

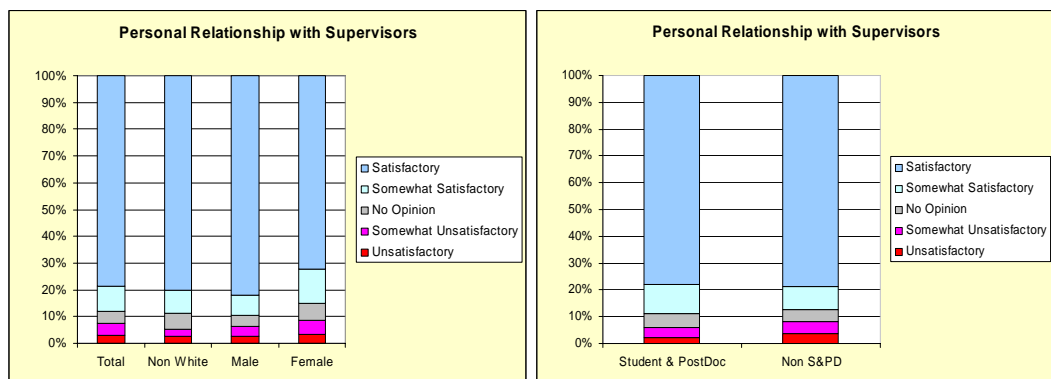
The following questions were numerically scaled as shown in the bar below. For the purposes of determining the mean value and the standard deviation in order to determine statistical significance, the value 3 was omitted from the analysis. Hence, the mean value given is for those who expressed an opinion.

1 Satisfactory	2 Somewhat satisfactory	3 No opinion	4 Somewhat unsatisfactory	5 Unsatisfactory
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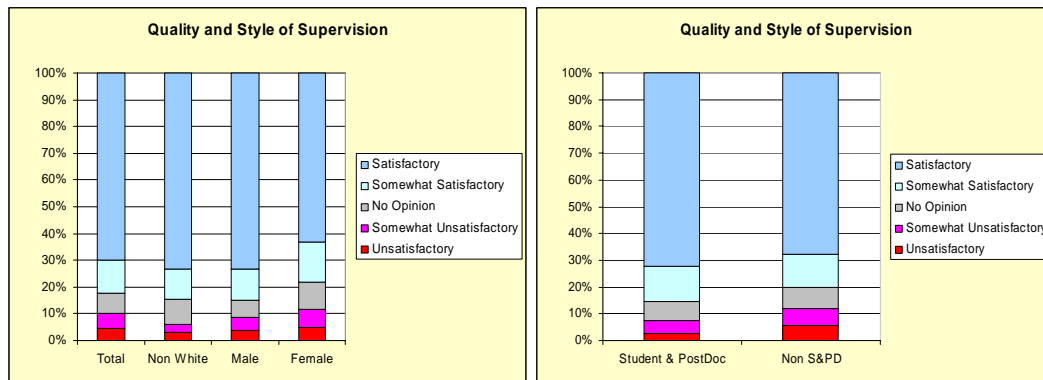
Work Conditions



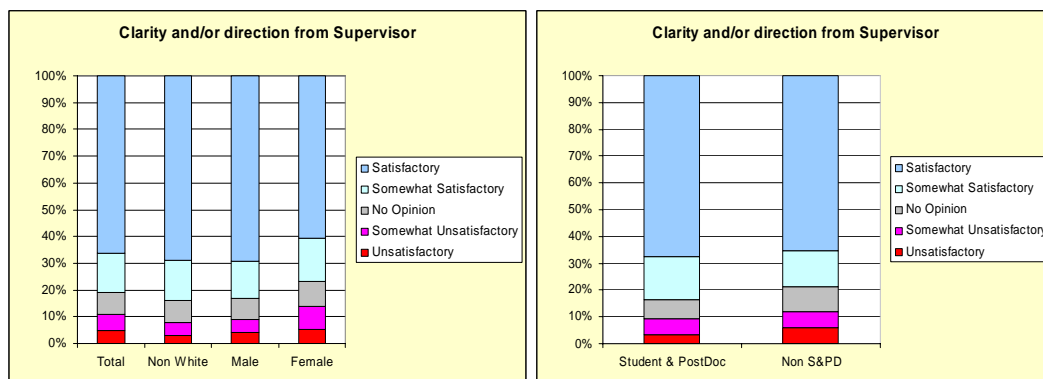
This is the most highly rated aspect of work at LBNL with >90% rating this as satisfactory or somewhat satisfactory. However, females are significantly less satisfied with their relationship with peers and coworkers than males.



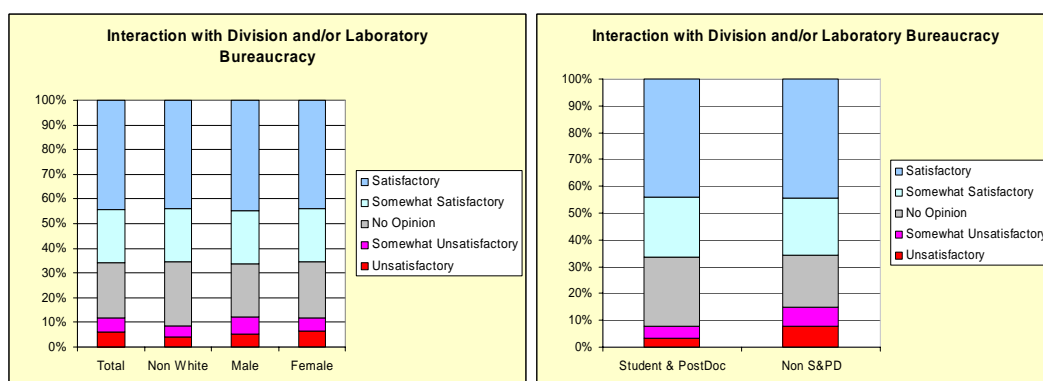
Statistically significant finding: Women rate their personal relationship with their supervisors as less satisfying than men do.



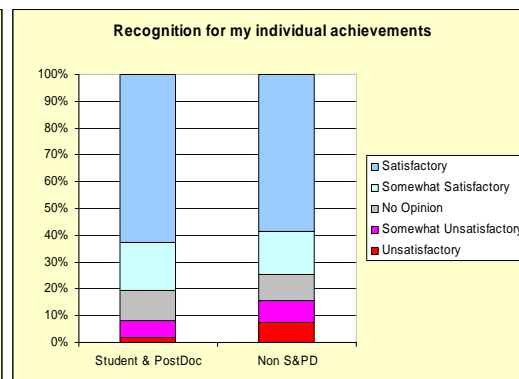
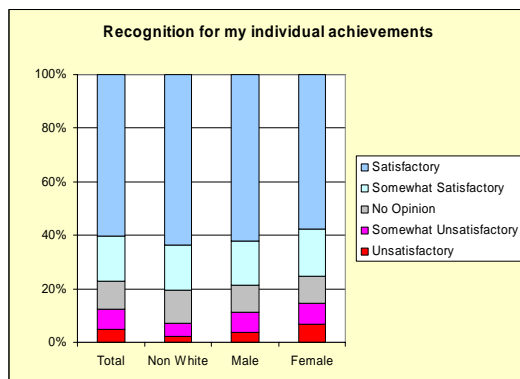
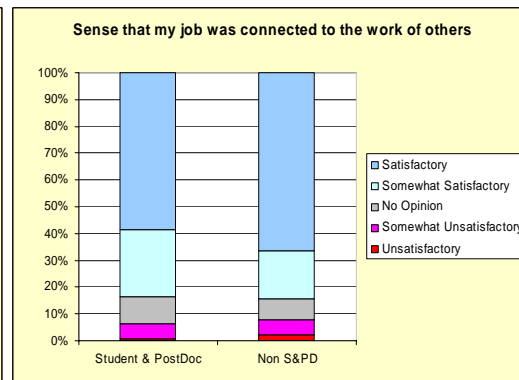
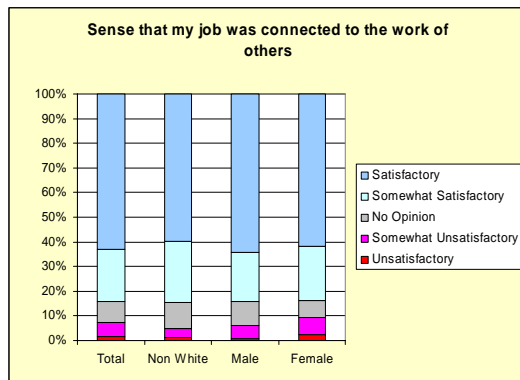
Statistically significant finding: Women express less satisfaction with the quality and style of supervision than men. Compared to students and postdocs, staff members are less satisfied with the quality and style of supervision. Non-minorities are less satisfied than minorities with the quality and style of supervision



Statistically significant finding: Women are significantly less satisfied than men with the clarity and/or direction from their supervisor.

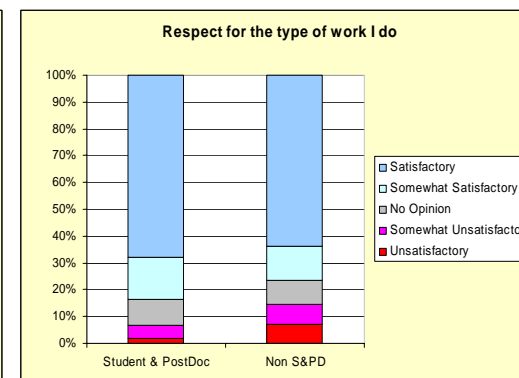
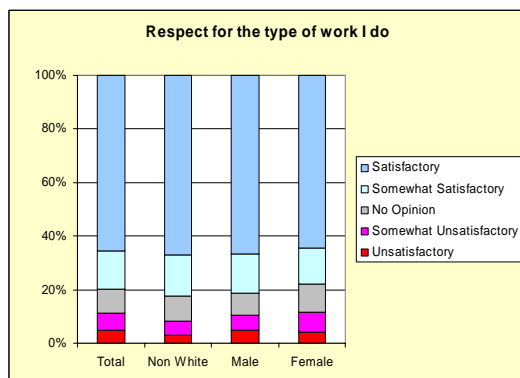


Across the board this is one of the lowest ratings for all groups. The staff is significantly less satisfied with the Laboratory Bureaucracy than students & postdocs.

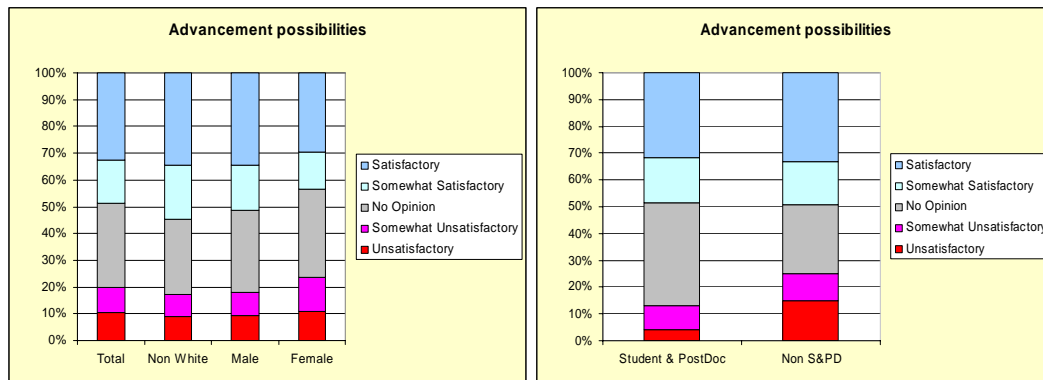


Statistically significant finding: Although this group is not indicated in the above figure, Whites (not of Hispanic origin) are less satisfied with this than non-whites.

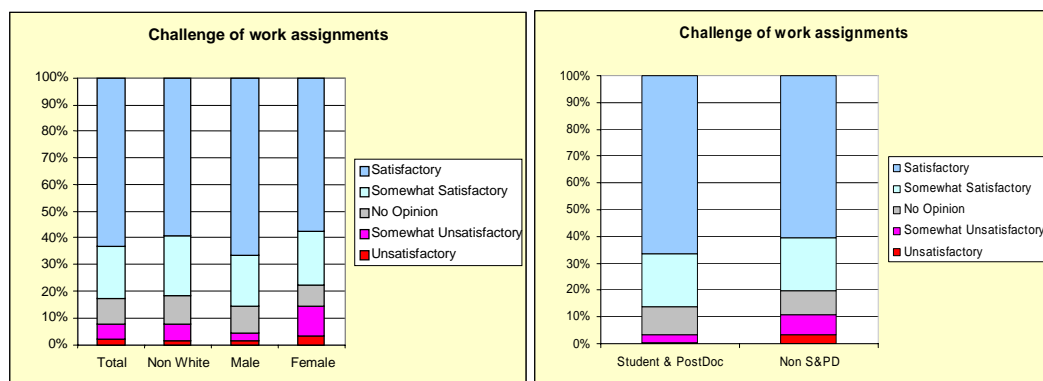
Staff are less satisfied than students with the recognition received for their achievements.



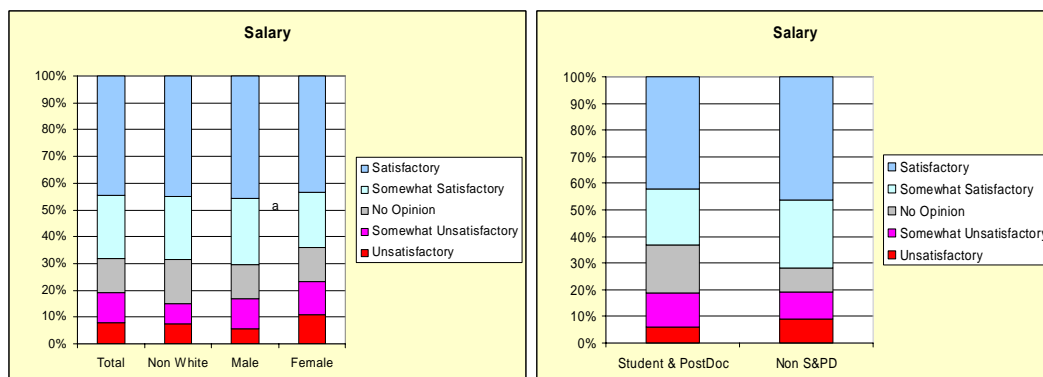
Statistically significant finding: Staff are less satisfied with the respect for the type of work they do.



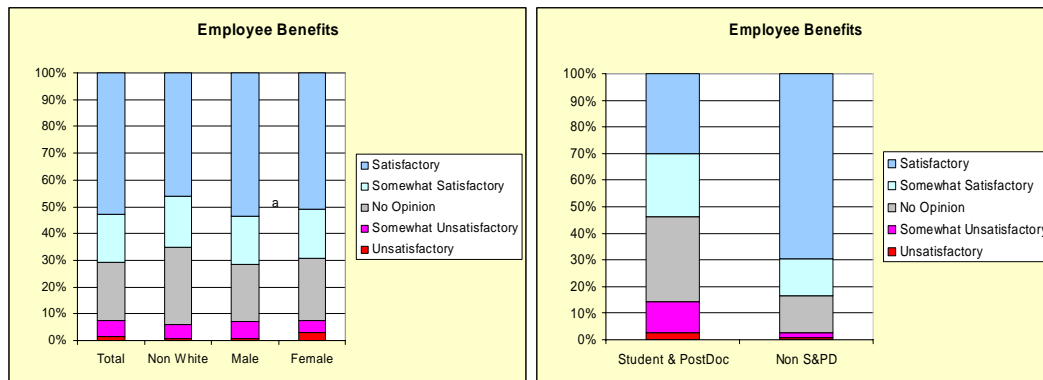
This is the lowest scoring question. Statistically significant finding: Staff are less satisfied with their advancement possibilities than student & postdocs. This has a much lower number of satisfied responses than other questions and over 20% of the employees rate this somewhat unsatisfactory or lower.



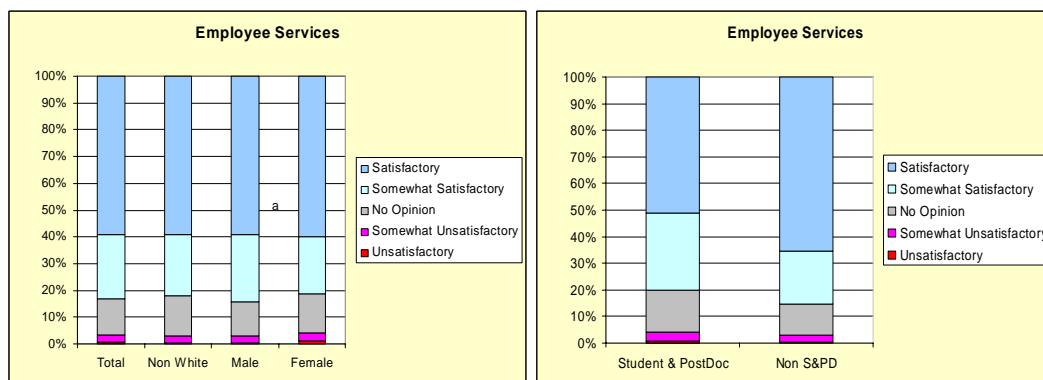
Statistically significant finding: Women are less satisfied than men are with the Challenge of their work assignments. This finding holds for staff in comparison to students and postdocs as well



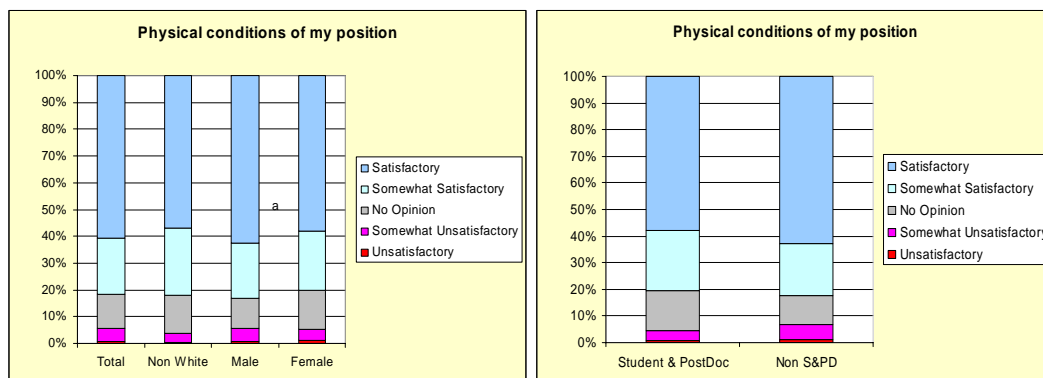
This the 4th lowest rated item. Statistically significant finding: Women are less satisfied with salary than men.

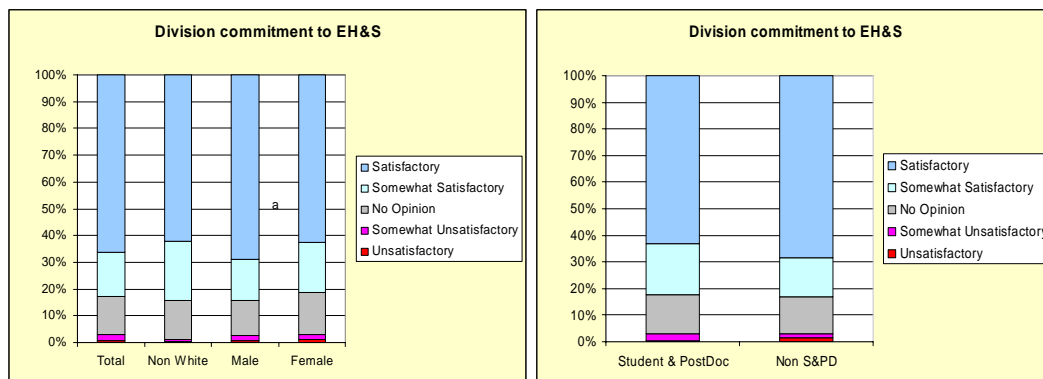


Statistically significant finding: Even though a large number of students & postdocs answer no opinion to this question, those who answer are less satisfied with Employee Benefits than staff.

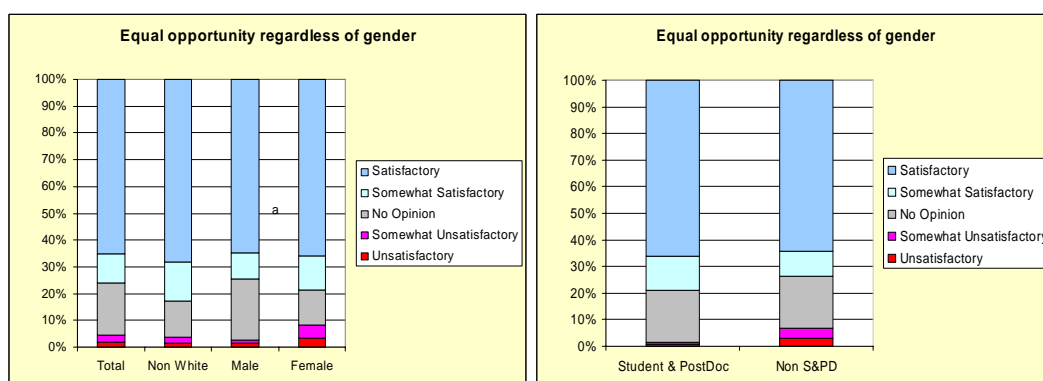


Statistically significant finding: Students and postdoctoral fellows are significantly less satisfied than staff with Employee Services.

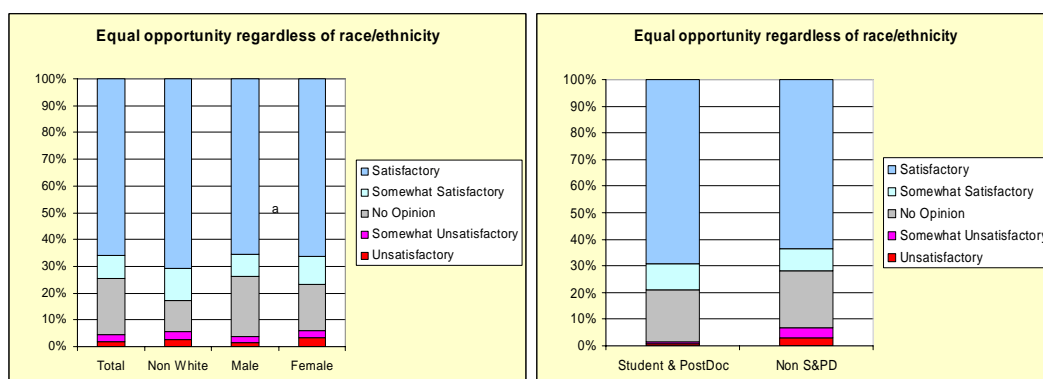




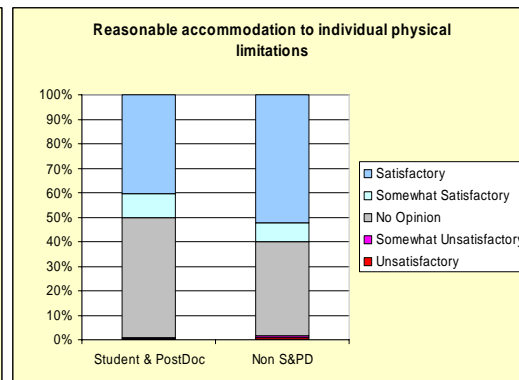
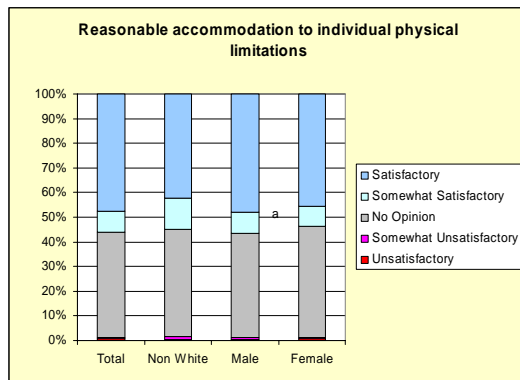
Very few people are dissatisfied with the Division commitment to EH&S.



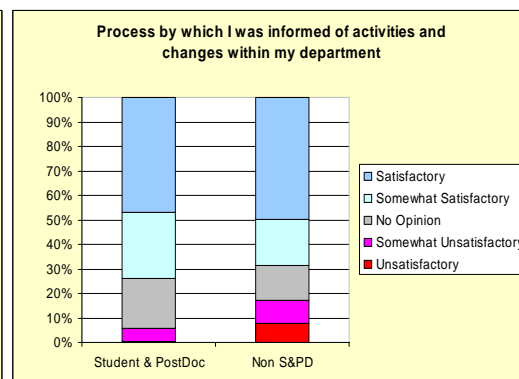
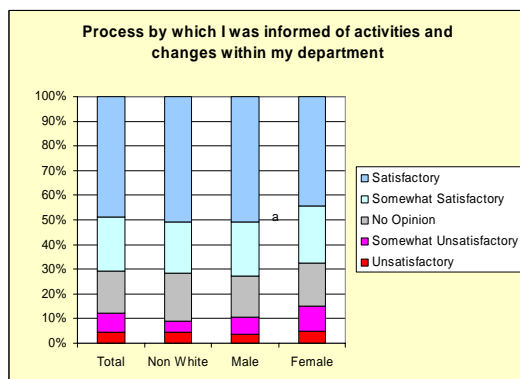
Statistically significant finding: Staff rate this lower than students & postdocs.
Women are less satisfied than men with equal opportunity regardless of gender.



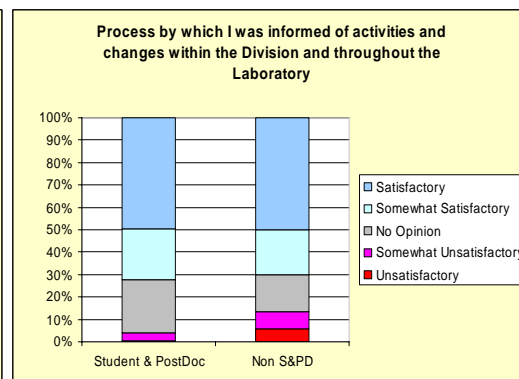
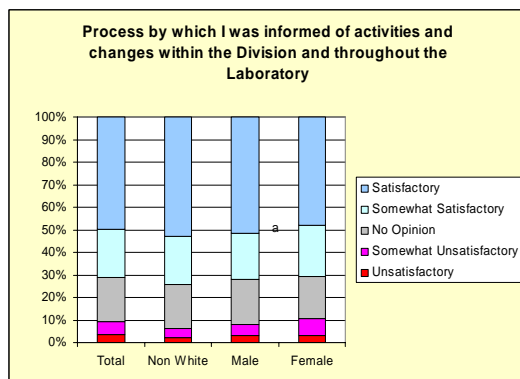
Statistically significant finding: Staff rate this lower than students & postdocs.



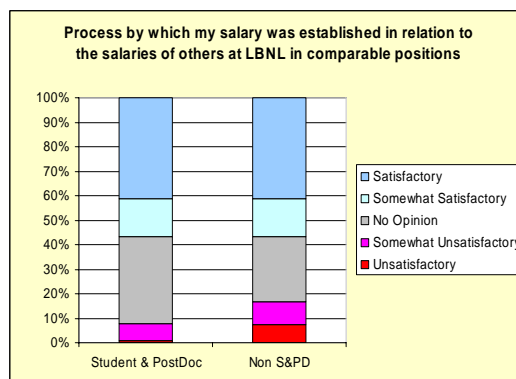
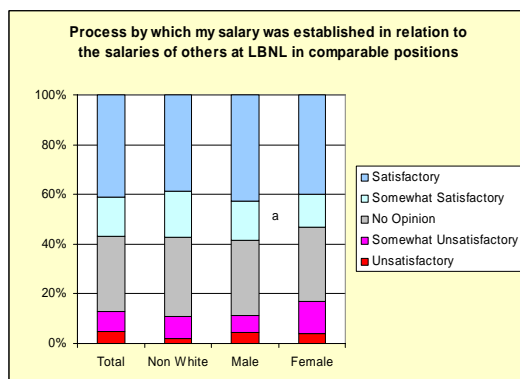
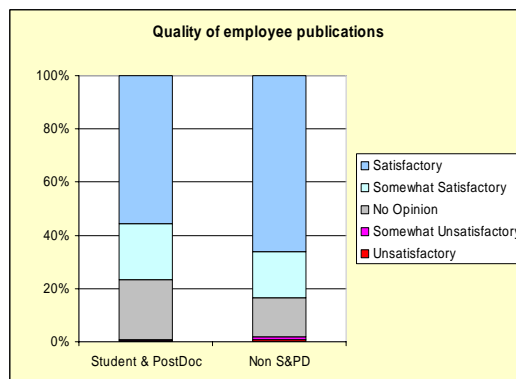
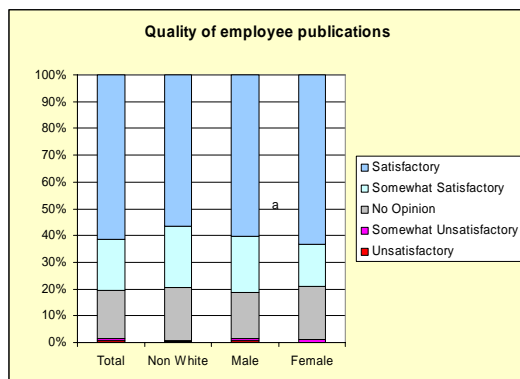
Communication within the Laboratory



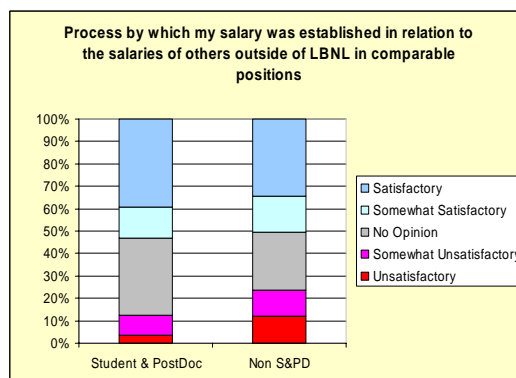
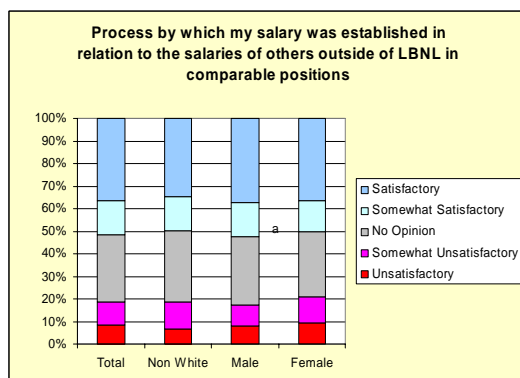
Statistically significant finding: Staff are significantly less satisfied with this than students and postdocs. Women also express significantly less satisfaction than men.



Statistically significant finding: Staff indicate less satisfaction than students and postdocs.

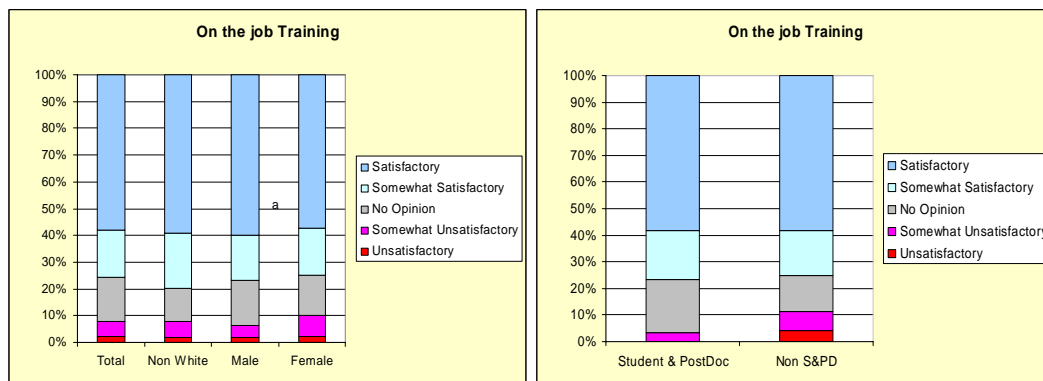
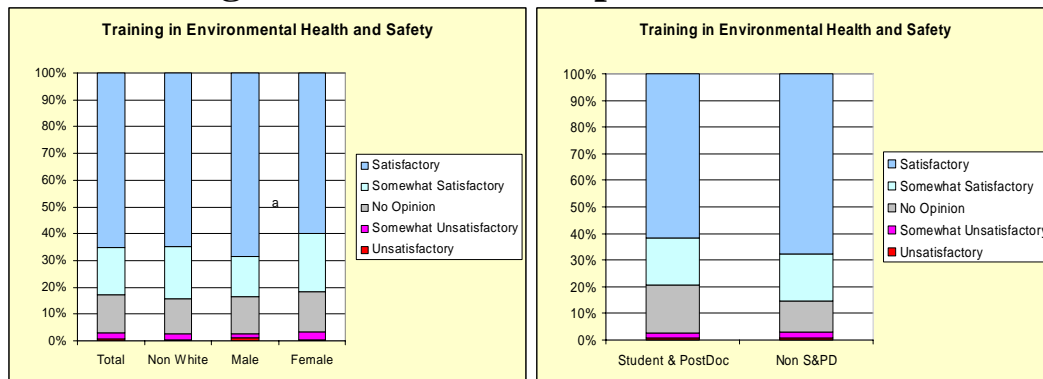


Statistically significant finding: Compared to students, staff express greater dissatisfaction with this.

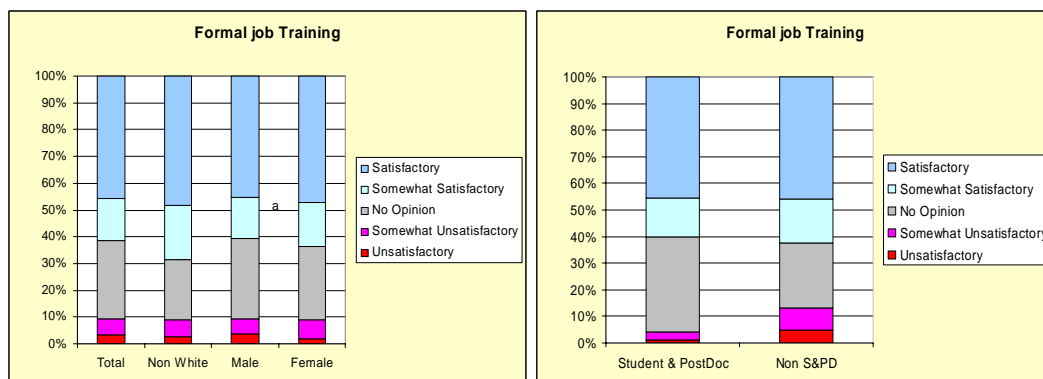


Statistically significant finding: Again, staff are significantly less satisfied with this process than students and postdocs.

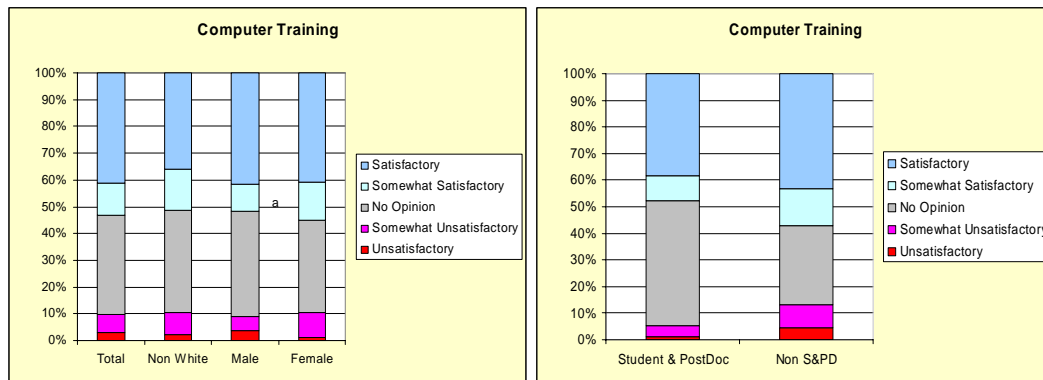
Job Training and Career Development



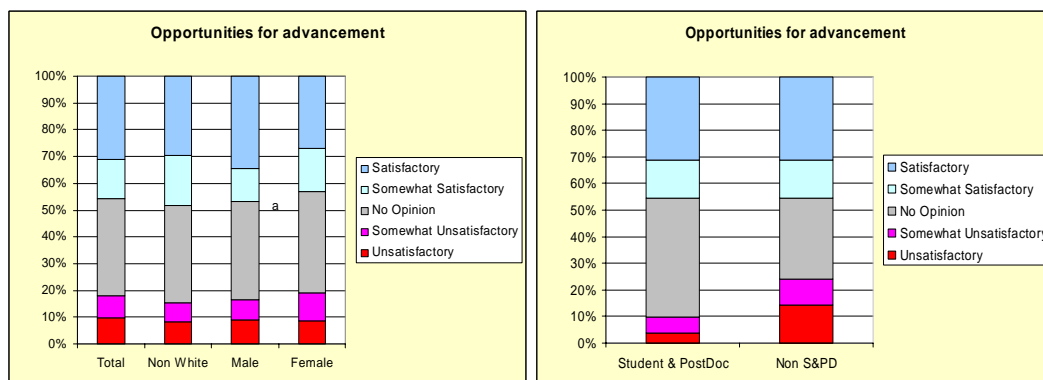
Statistically significant finding: Staff indicate significantly less satisfaction than students and postdocs with on the job training.



Statistically significant finding: Staff are less satisfied than students with formal job training.



Statistically significant finding: Staff express greater dissatisfaction than students with computer training.



Statistically significant finding: Compared to students and postdocs, staff members express greater dissatisfaction with their opportunities for advancement.